ITS Service D. Radeck GmbH

Zentralwerkstatt und Ersatzteildepot
für ITS- und ICE-Produkte

SI **Wichtig für die Werkstatt!**

Sachgebiet: TV

Nummer: 49

Datum: 7.4.92

Lademannbogen 49
2000 Hamburg 63

Zentrale	: (0 40) 53 89 90-0
Technische Auskunft	: (0 40) 53 89 90-42
ET-Bestellung	: (0 40) 53 89 90-44
Rep.-Abwicklung	: (0 40) 53 89 90-45
Telefax	: (0 40) 53 89 90-48
Telex	: 217 40 97

Service Information

Betrifft: Reparaturtips
TV 1026/P/PS

Verteiler: Intern / Extern

TV 1026 PAL / PAL SECAM

Fehler	Ursache
Bild dunkel	R 425 def.
Bild hell und Rücklaufstreifen	D 305 def.
Keine Farbe nach längerer Zeit	C 329 def.
Kein Suchlauf	X 601 Lötstelle
Keine Speicherung bei 12 V Betrieb	Spg. am C 413 mit T 402 auf 5lV stellen
Zeitweilig nur Schnee, Speicher wird nicht ausgelesen	D 407 def. in BA 157 ändern
Keine Einblendung	Lötstellen an Q 606
Si F402 def.	Di D 402 def.(12V Kabel prüfen)
Videorecorder synchronisiert nicht	AGC prüfen
Einblendung hat schwarzen Schatten	D 305 def.
Senkrechte Streifen am linken Bildrand	Signalleitung für BR-Anschlußplatte justieren
Schaltet sofort ein und nur Schnee (1026PS)	Q 605 def.

Kundendienstleiter Dieter Radeck

its – Ralf Trautwein GmbH
Unterhaltungselektronik

SI **Wichtig für die Werkstatt!**

Sachgebiet: FERNSEHER

Nummer: 14

Datum: 24.01.1989

Lademannbogen 49
2000 Hamburg 63
Tel.: 040 / 538 990 - 0
Neu Neu Neu
Fax: 040 / 538 990 - 48

Service Information

Betrifft: TV 1026 /

Verteiler: Intern / Extern

HILFE ZUR FEHLERBESEITIGUNG

Gerät ist sehr hell und läßt sich kaum in der Helligkeit verändern

D 305 erneuern.

Keine Farbe nach längerer Zeit

C 329 erneuern.

Programmsuchlauf geht nicht

x 601 hat eine kalte Lötstelle.

Kundendienstleiter Dieter Radeck

ALIGNMENT INSTRUCTION

I. PLEASE READ BEFORE ATTEMPTING SERVICE

1. Never disconnect any leads while receiver is in operation.
2. Disconnect all power before attempting any repairs.
3. Do not short any portion of the circuit while power is on.
4. For reason of safety, all parts replaced should be identical, (for parts and part number see PARTS LIST).
5. Before alignment the set must be pre-heated for 30 minutes or more and erase magnetism thoroughly from CRT front chassis frame by erase coil.

II. TEST EQUIPMENT

1. VIF Sweep Generator
2. SIF Sweep Generator
3. Color Bar/Dot/Cross Hatch Generator
4. DC Power Supply (14V)
5. Oscilloscope
6. Vacuum Tube Volt Meter
7. Volt Ohm Meter
8. High Voltage Meter
9. Ampere Meter (0.5 Class,DC 3mA Max.
10. Demagnetizing Coil
11. Philips Pattern Generator
12. Frequency Counter
13. Continuous Waveform Generator

NOTE : Unsolder the solder link (A) and solder link (B) on the foil side of main board before alignment steps. (See bottom view of component diagram on main board.)

III. TANK COIL ALIGNMENT

A. PREPARATION STEP (SEE Fig. 2)

1. Connect OUTPUT lead of VIF Sweep Generator between tuner test point TP and tuner case.
2. Connect lead of FROM DET,between TP 201 and GND.
3. Supply DC +14V to ⊕ lead of C 414.
4. Supply RF AGC bias voltage to TP 101 (See Fig.1)

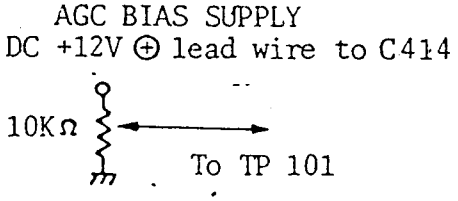
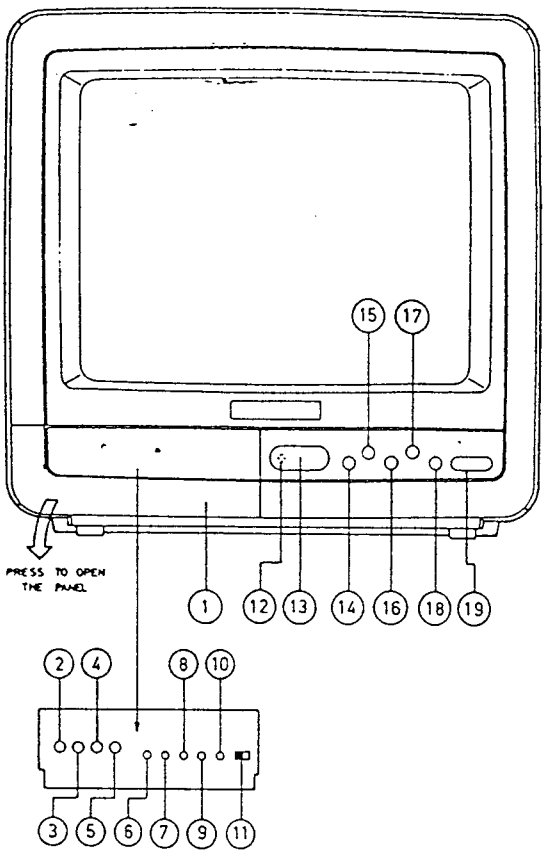


Fig. 1

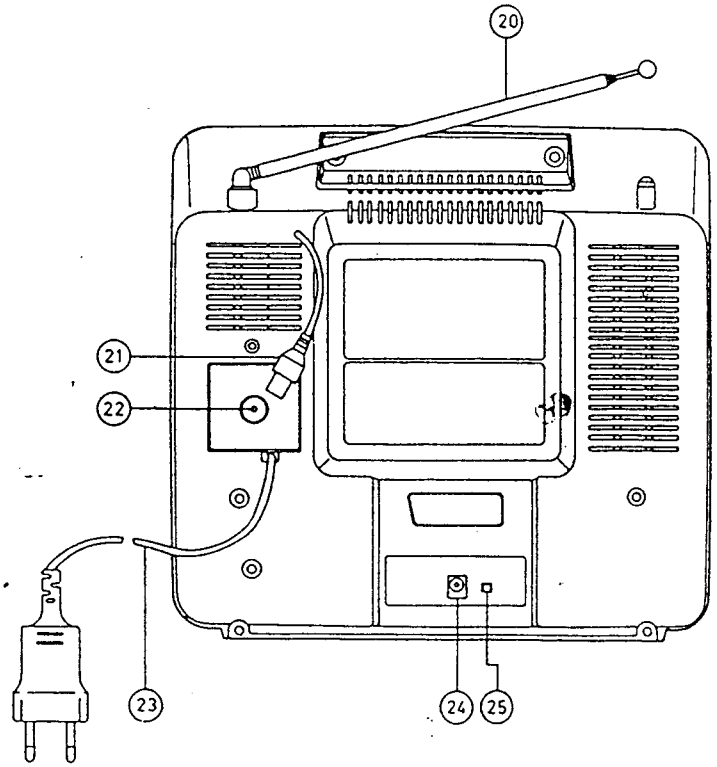
MC-Service

CONTROL LOCATION :

1. Panel Door
2. Contrast Control
3. Brightness Control
4. Color Control
5. Vertical Hold Control
6. Band Selector Button
7. Hi-Speed Button
8. Tuning (-)
9. Tuning (+)
10. Storage Button
11. Preset Switch (ON / OFF)
12. Power Indicator
13. Remote Sensor
14. Channel Down Control
15. Channel Up Control
16. Volume Down Control
17. Volume Up Control
18. Stand-By Control
19. Power Switch (ON / OFF)



20. Rod Antenna
21. Rod Antenna Connector
22. Antenna Input Socket (75 Ohm)
23. AC Main Lead
24. DC Jack
25. Degauss Switch



B. ALIGNMENT STEP

1. Adjust AGC bias voltage for maximum amplitude of waveform.
2. Adjust the level of Sweep Generator to achieve 1Vp-p output.
3. Increase the output level of Sweep Generator in 20dB.
4. Adjust AGC bias voltage to achieve 1Vp-p output (on Oscilloscope).
5. Adjust tuner converter coil to obtain the waveform as in Fig. 4.

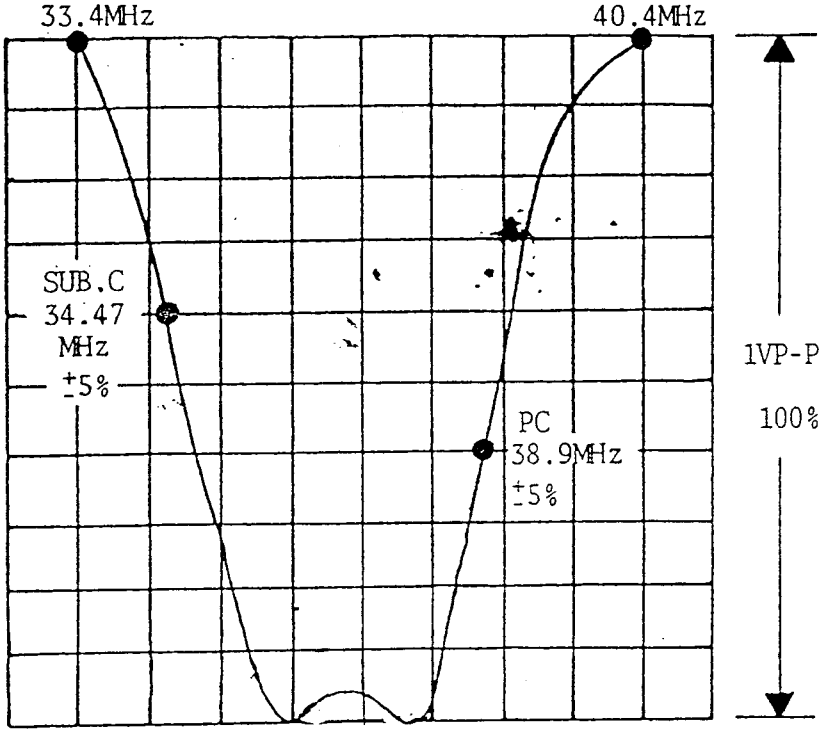


Fig.4

1. Connect RF AGC bias voltage at TP101.
2. Remove the damping resistor (100 Ohm) at TP 105, TP 106.
3. Connect output lead of Sweep Generator to tuner test point TP & tuner ca
4. Increase the output level of Sweep Generator in 10 dB.
5. Connect lead of FROM DET between TP 104 and GND.
6. Supply DC +14V to ⊕ lead of C414.

B. ALIGNMENT STEP

1. Adjust the AGC bias to achieve 3VP-P output.
2. Adjust T 104 so that picture carrier 38.9MHz is centered as in Fig.5.

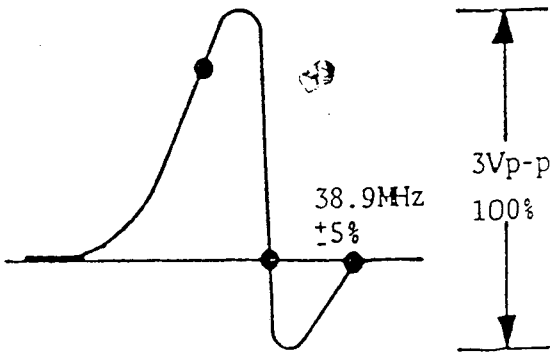


Fig.5

MC-Service

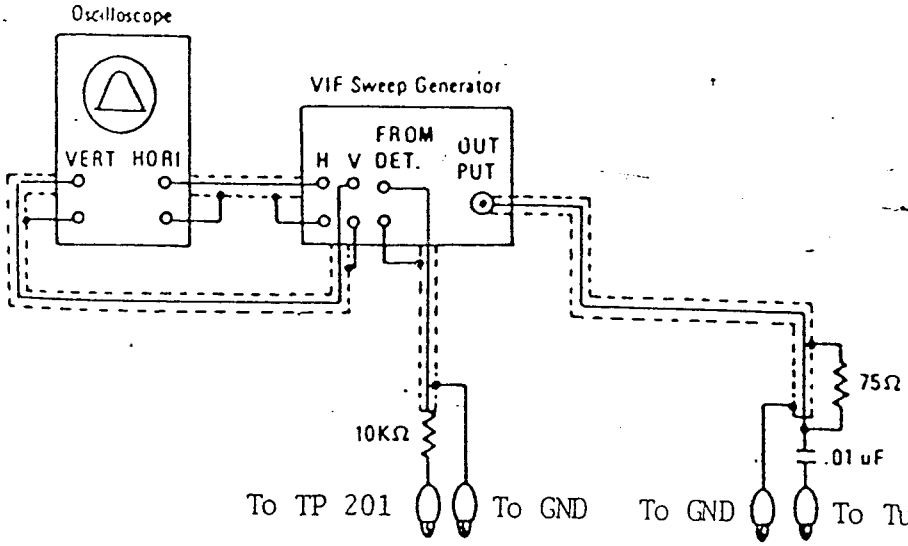


Fig.2

B. ALIGNMENT STEP (See Fig.3)

1. Adjust AGC bias voltage for maximum amplitude of waveform.
2. Adjust the level of Sweep Generator to achieve 1Vp-p output.
3. Adjust T 102 to obtain maximum amplitude of response cause at PC. (38.9 MH

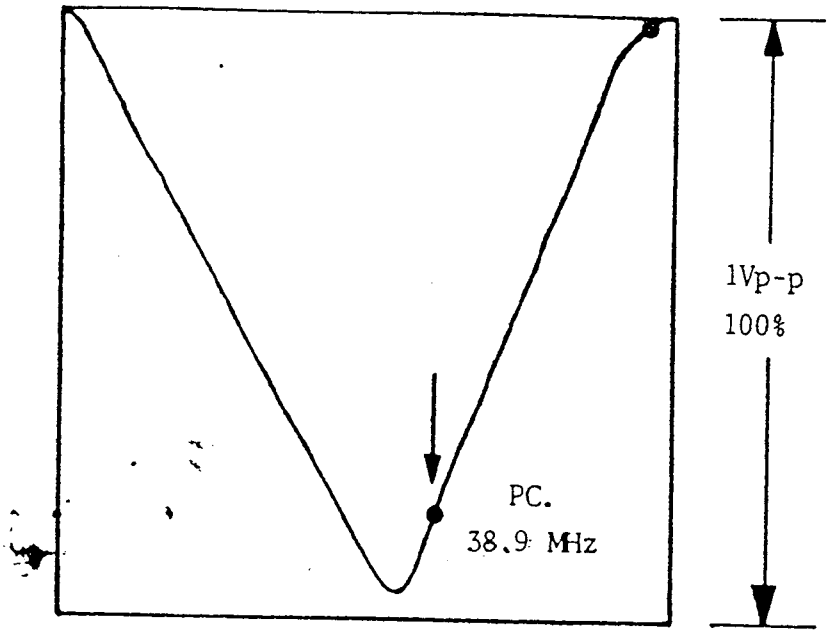


Fig.3

IV. VIF ALIGNMENT

A. PREPARATION STEP (See Fig.2)

1. Connect output lead of VIF Sweep Generator between tuner test point TP and tuner case.
2. Connect resistor (100 Ohm) between TP 105 and TP 106.
3. Connect lead of FROM DET between TP 201 and GND.
4. Supply DC +14V to ⊕ lead of C414.
5. Supply RF AGC bias voltage to TP 101 (See Fig.1)

IX. VERTICAL CIRCUIT ADJUSTMENT

1. Receive the monoscope pattern.
2. Adjust V-size (VR 302) to obtain a normal picture.

X. WHITE BALANCE ADJUSTMENT

1. Set the Screen control (ON THE FBT) to minimum position.
2. Turn the red Low Light control (VR 505) and turn the green, blue Driver controls (VR 502, VR 504) to middle position, and turn the green, blue Low Light controls (VR 503, VR 501) to minimum position.
3. Receive the Monoscope pattern.
4. Set the Service switch (S 301) to "SERVICE" position.
5. Slowly turn the screen control clockwise to the point where a horizontal lin just illuminates.
6. Adjust VR 505 to get a red horizontal line on CRT.
7. Adjust VR 503 to get a yellow horizontal line on CRT.
8. Adjust VR 501 to get a white horizontal line on CRT.
9. Reset the Service switch (S 301) to normal position.
10. Set Brightness control (VR 401) to middle position.
11. Adjust Drive control (VR 502, VR 504) to obtain a uniform white picture.

XI. FOCUS ADJUSTMENT

1. Set Contrast control and Brightness control to middle position.
2. Adjust Focus control (ON THE FBT) to obtain a sharpest picture on the CRT.

XII. RF AGC

1. Receive the signal of (UHF channel) and set the AFC ON. (PRESET SWITCH TO 01 POSITION)
2. Set the input field strength in 62 ± 3dB.
3. Adjust RF AGC control (VR 101) to the point where noise is disappeared.

XIII. COLOR SYNC. ADJUSTMENT

1. Receive PHILIPS pattern and warm up for five minutes.
2. Connect terminal TP 304 and the earth with the short jumper wire.
3. Connect the TP 305 and TP 303 with 10K Ohm resistor so that the color kille turns off.
4. Then the color stripes appear on the screen when the adjustment is incorrec Adjust the color sync.(CT 301) so that the PHILIPS pattern stands still or drifts slowly across the picture screen.
5. Remove the 10K Ohm resistor and jumper wire.

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VI. SIF ALIGNMENT

A. PREPARATION STEP (SEE Fig. 6)

1. Connect output lead of SIF Sweep Generator between TP 201 and GND.
2. Connect lead of FROM DET between TP 103 and GND..
3. Supply DC +14V to ⊕ lead of C 414.

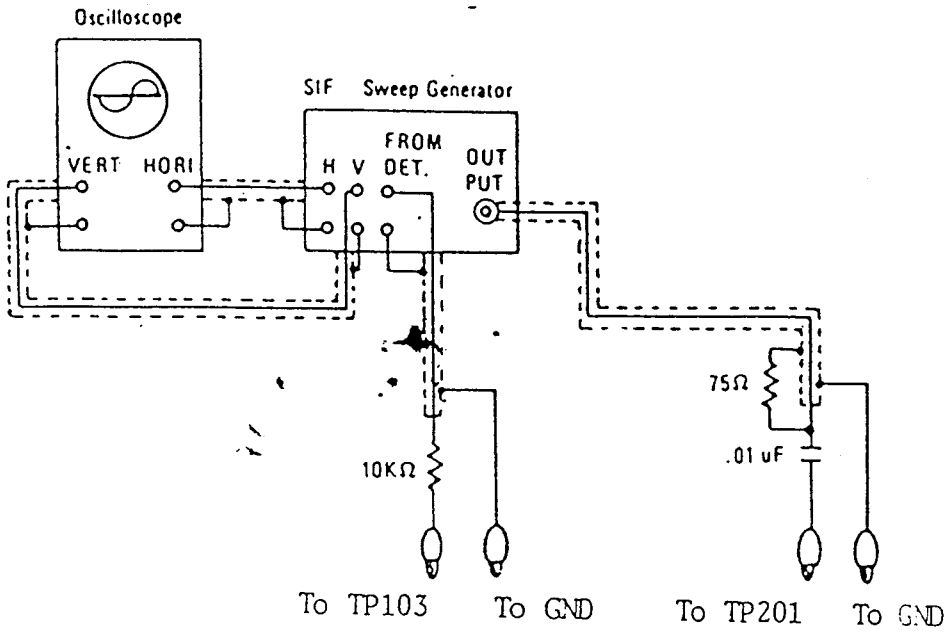

FIG. 6

B. ALIGNMENT STEP

1. Adjust output of Sweep Generator to achieve 4Vp-p between markers of 100KHz.
2. Adjust T103 that sound carrier is centered as in Fig. 7.

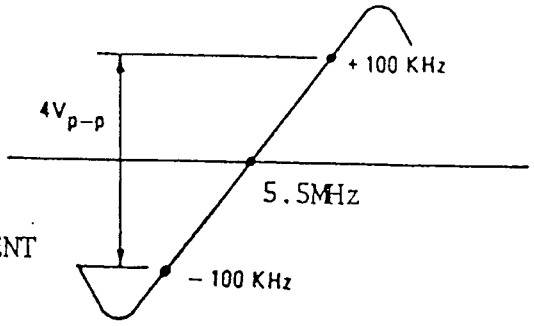

FIG. 7

VII. -30 VOLTAGE OSCILLATOR CIRCUIT ADJUSTMENT

1. Supply DC 14V to ⊕ lead of C403.
2. Connect the DIGITAL VOLTAGE METER ⊕ lead to C413 and ⊖ lead to GND.
3. Adjust the T402 to DC -52V (+0.5V -0.2V) of the DIGITAL VOLTAGE METER.

NOTE : After completing the above steps, disconnect equipment, resolder the solder links (A) and (B).

VIII. HORIZONTAL CIRCUIT ADJUSTMENT

1. Receive Monoscope pattern input signal 80 dBuV.
2. Connect terminal TP 302 and the earth with the short Jumper wire.
3. Adjust VR 301 to obtain the picture running at center.
4. Adjust VR 305 to obtain the picture at center.

7. Fully turn the red and blue Low Light controls (VR 505, VR 503, VR 501) counterclockwise.
8. Adjust the purity magnets so that green field is obtained at the center of the screen.
9. Slowly push the deflection yoke toward bell of CRT and set it where a uniform green field is obtained.
10. Tighteen the clamp screw of the deflection yoke.

XVII. ON SCREEN DISPLAY CENTER ADJUST

1. Receiver the monoscope pattern.
2. Adjust the center V.R. (VR 601) to make the on screen lettering at the cente: of picture tube, when the preset switch to "OFF" position from "ON" positi(

XVIII. CONVERGENCE ADJUSTMENT (SEE FIG. 9)

1. Receive a dotted pattern.
2. Unfix the convergence magnet clamper and align red with blue dots at the center of the screen by rotating (R,B) static convergence magnets.
3. Align Red / Blue with green dots at the center of the screen by rotating (RB-G) static convergence magnet.
4. Fix the convergence magnets by turning the clamper.
5. Remove the DY wedges and slightly tilt the deflection yoke horizontally and vertically to obtain the good overall convergence.
6. Fix the deflection yoke by wedges.
7. If purity error is found, follow "PURITY ADJUSTMENT" instructions.

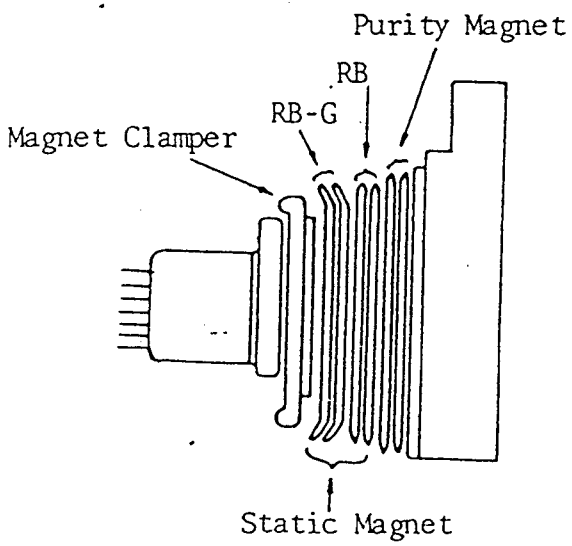

FIG. 9

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XIV. COLOR DEMODULATOR ALIGNMENT, DELAY LINE ALIGNMENT

1. Receive PHILIPS pattern and set the AFC switch to 'ON' position. (PRESET SWITCH TO OFF POSITION)
2. Set the Service switch (S 301) to service position.
3. Set Color control (VR 401) to maximum position.
4. Connect oscilloscope to TP 309 (B out).
5. Adjust (VR 303, T 301, T 302) to obtain the waveform as in Fig. 8.

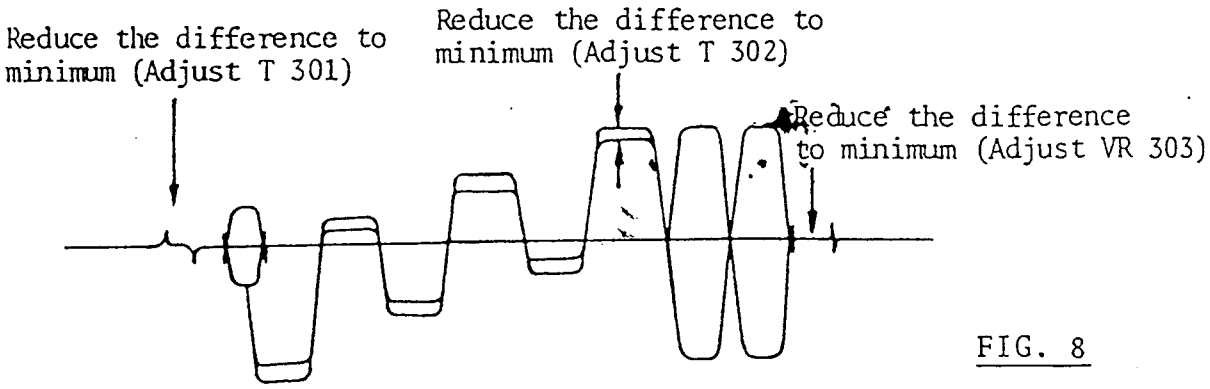

Reduce the difference to minimum (Adjust T 301)
Reduce the difference to minimum (Adjust T 302)
Reduce the difference to minimum (Adjust VR 303)

FIG. 8

XV. SUB-BRIGHTNESS ALIGNMENT

1. Connect the negative side to TP 402 and positive side to TP 401 of DC ampere meter (3mA full scale range).
2. Receive PHILIPS pattern and set AFC switch set 'ON' position. (PRESET SWITCH TO OFF POSITION)
3. Set controls as follows :

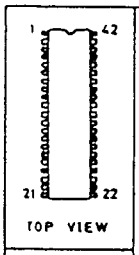
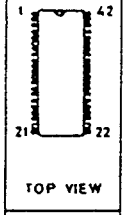
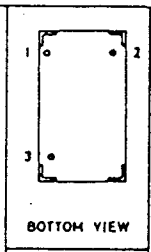
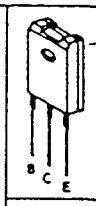
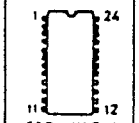
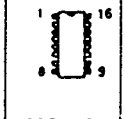
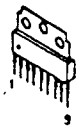
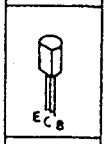
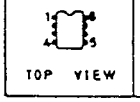
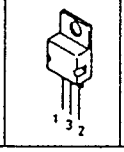
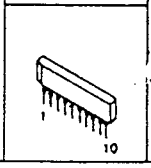
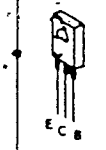
   BRIGHTNESS CONTROL ..... MIN. POSITION
   CONTRAST CONTROL ..... MAX. POSITION
   COLOR CONTROL ..... MAX. POSITION
4. Adjust SUB-BRIGHTNESS control (VR 405) the reading of 280uA.

XVI. COLOR PURITY ADJUSTMENT (SEE FIG. 9)

BEFORE ALL ADJUSTMENT DESCRIBED BELOW ARE ATTEMPTED, V-HOLD, H-HOLD, V-HIGH, B + VOLTAGE AND FOCUSING ADJUSTMENT MUST BE COMPLETED.

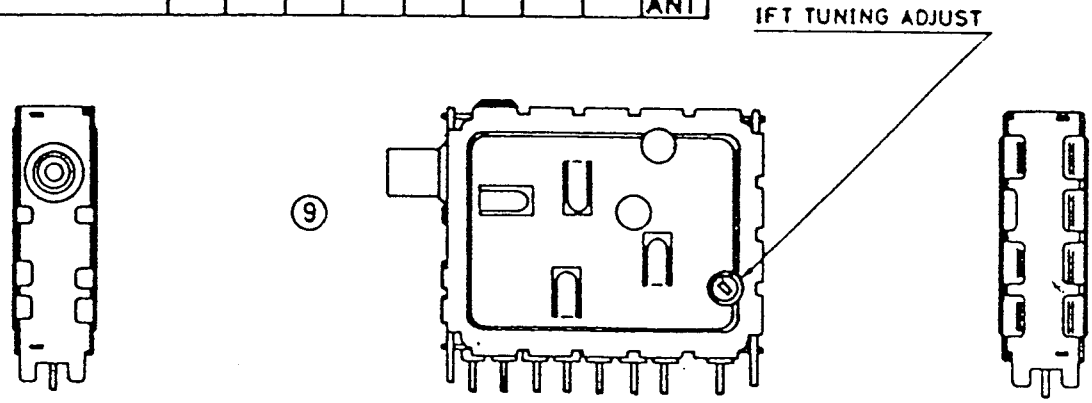
1. Place the TV receiver facing NORTH or SOUTH.
2. Plug in TV receiver and turn it on.
3. Operate the TV receiver over 30 minutes.
4. Fully degauss the TV receiver by using and external degaussing coil.
5. Receive a crosshatch pattern and adjust the static convergence control roughly.
6. Loosen the clamp screw of the deflection yoke and pull the deflection yoke toward you.

TRANSISTOR AND IC IDENTIFY :

 TOP VIEW	TA 7698AP	 TOP VIEW	MN 15245	 BOTTOM VIEW	AL 2711		2SD 1680		BSX 20
 TOP VIEW	TA 7680AP	 TOP VIEW	MN 1220		AN 5512		2SD 400F 2SC 1573		
 TOP VIEW	TBA 820M		L 7812		AN 5026K		2SC 2209		2SA 1015 2SA 562 2SC 388A 2SC 1815Y 2SK 30A

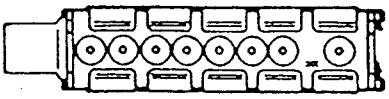
PICTORIAL VIEW OF TUNER :

Terminal NO.	1	2	3	4	5	6	7	8	9
Terminal name	BU	VT	BH	AGC	BL	AFT	BM	IF	V/U ANT



SUPPLY VOLTAGE (V)				
Term.	ch.	VHF LO	VHF HI	UHF
7	BM	12	12	12
5	BL	12	Open	12
3	BH	Open	12	Open
1	BU	Open	Open	12

①②③④⑤⑥⑦ ⑧



VOLTAGE TABLE FOR REMOTE IC ONLY				
SYMBOL / PIN NO.	IC403 (V)	IC601 (V)	IC602 (V)	IC801 (V)
1	GND	0	GND	1.77
2	10.70	GND	2.32	0.86
3	NC	0	0	4.52
4	21.70	NC	4.43	NC
5	NC	NC	4.62	GND
6	0.70	NC	4.60	GND
7	-0.03	NC	3.80	2.22
8	1.04	4.73	4.64	2.24
9	21.50	-32.7	4.50	4.53
10		NC	4.61	1.20
11		0	4.61	
12		NC	4.61	
13		NC	4.61	
14		NC	4.58	
15			4.57	
16			4.58	
17			0.10	
18			0.02	
19			0.02	
20			0.02	
21			0.02	
22			NC	
23			0	
24			0	
25			2.97	
26			NC	
27			NC	
28			NC	
29			NC	
30			0.02	
31			NC	
32			NC	
33			NC	
34			1.17	
35			2.56	
36			2.88	
37			NC	
38			NC	
39			11.00	
40			2.25	
41			2.17	
42			4.64	

NOTE : VOLTAGE ARE TABLE UNDER TUNED CONDITION WITH

CONTRAST : Maximum Position

BRIGHTNESS : Center Position

COLOR : Center Position

SIGNAL INPUT : 80 dBuV

CHANNEL SETTING : The Last Channel of UHF High

VOLTAGE TABLE FOR TRANSISTOR			
SYMBOL	B (V)	C (V)	E (V)
Q101	0.47	7.14	GND
Q102	1.00	7.47	0.27
Q301	0.02	3.27	GND
Q302	0.02	3.17	GND
Q303	0.70	0.11	GND
Q304	5.90	0.95	6.06
Q401	-1.47	9.77	0.47
Q402	0.47	5.84	GND
Q403	-0.19	21 60	GND
Q501	2.00	83.30	2.85
Q502	6.42	83.70	6.08
Q503	2.00	82.50	2.85
Q504	6.43	82.50	6.80
Q505	6.42	83.70	6.09
Q602	4.66	0	4.66
Q604	0.75	0	GND
Q605	6.07	11.90	5.38
Q606	-0.09	4.21	GND
Q607	-0.04	4.49	GND
Q609	0.02	0.70	GND
Q610	0.37	2.87	GND
Q611	0.62	0.15	GND
Q612	10.50	0	10.50
Q613	10.50	0	10.50
Q614	9.81	10.50	10.50
Q615	0	4.63	GND
Q201	0.17	0.53	GND
Q202	0.65	0.17	GND
	S (V)	G (V)	D (V)
Q103	5.47	0	6.55

NOTE : Voltage are taken under tuned condition with

CONTRAST : Maximum Position
BRIGHTNESS : Center Position
COLOR : Center Position
SIGNAL INPUT : 80 dBuV
CHANNEL SETTING : The Last Channel of UHF High

VOLTAGE TABLE FOR IC

SYMBOL / PIN NO.	IC101 (V)	IC201 (V)	IC301 (V)	IC401 (V)	IC402 (V)
1	5.13	0.66	3.66	12.9	13.2
2	2.67	0.52	10.30	11.2	GND
3	5.97	0	3.75	GND	10.9
4	GND	GND	3.68		
5	7.20	5.05	1.02		
6	4.21	10.50	7.92		
7	4.21	10.40	4.95		
8	4.21	NC	8.46		
9	4.21		5.26		
10	7.22		6.44		
11	2.00		GND		
12	GND		8.00		
13	5.50		8.03		
14	6.60		3.07		
15	3.29		3.07		
16	3.73		7.20		
17	7.14		3.49		
18	7.14		7.19		
19	3.74		3.49		
20	10.40		6.43		
21	4.50		6.43		
22	4.51		6.42		
23	5.50		5.62		
24	4.51		0.72		
25			NC		
26			8.06		
27			7.98		
28			0		
29			2.41		
30			GND		
31			GND		
32			0.38		
33			8.36		
34			4.67		
35			4.58		
36			2.37		
37			0		
38			0.47		
39			3.28		
40			5.96		
41			6.26		
42			7.60		

NOTE : VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

CONTRAST : Maximum Position

BRIGHTNESS : Center Position

COLOR : Center Position

SIGNAL INPUT : 80 dBuV

CHANNEL SETTING : The Last Channel of UHF High

SCHEMATIC DIAGRAM FOR PAL-B/G(FTZ) SYSTEM

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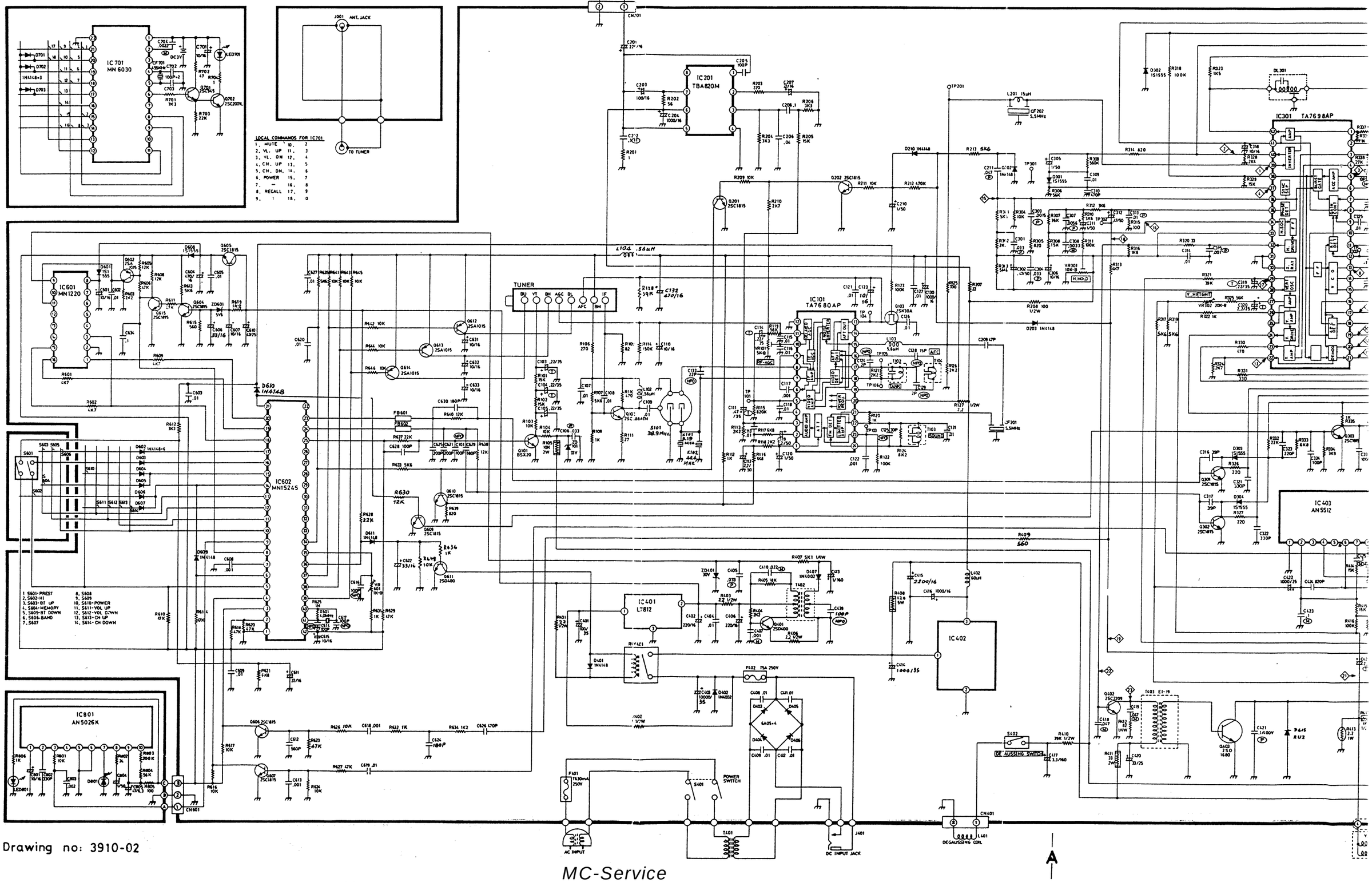

Drawing no: 3910-02

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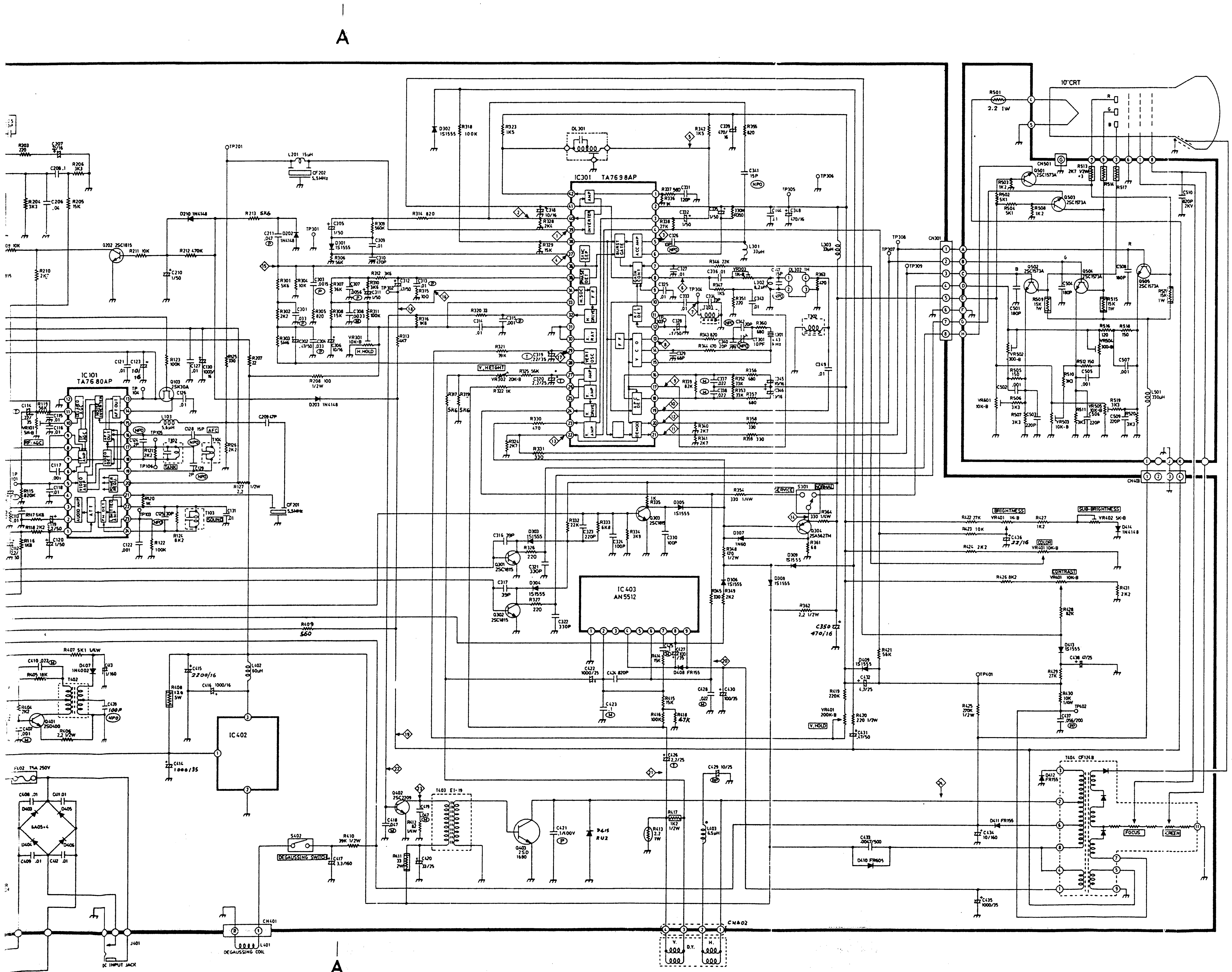

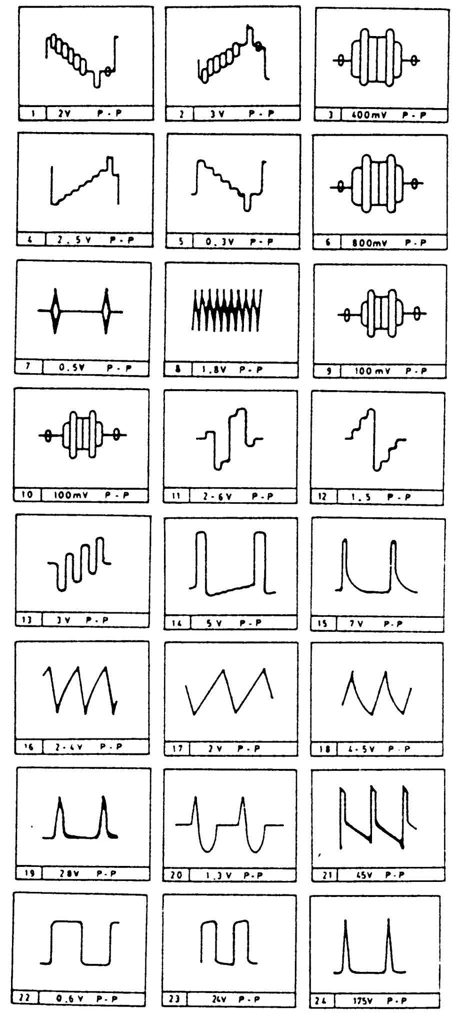

NOTE :

(1) ALL CAPACITORS ARE IN μF UNLESS OTHERWISE NOTED.
ALL CAPACITORS ARE 50wv UNLESS OTHERWISE NOTED.

(2) CAPACITOR NOT SPECIFICALLY DESIGNATED ARE CERAMIC CAPACITORS.
- a.) ELECTROLYTIC CAPACITOR
- b.) BI-POLAR ELECTROLYTIC CAPACITOR.
- c.) Ⓣ TANTALUM CAPACITOR.
- d.) METALLIZED POLYESTER.
- e.) Ⓟ POLYESTER FILM CAPACITOR.
- f.) PP POLYPROPYLENE CAPACITOR.
- g.) Ⓜ MYLAR CAPACITOR.

(3) ALL RESISTORS ARE IN OHM 1/16 WATT UNLESS OTHERWISE NOTED.

(4) RESISTOR NOT SPECIFICALLY DESIGNATED ARE CARBON FILM RESISTORS.
- a.) NONFLAMMBLE RESISTOR
- b.) FUSEBLE RESISTOR.
- c.) CEMENT RESISTOR.
- d.) METAL OXIDE RESISTOR.
- e.) THERMISTOR.

(5) DC VOLTAGE ARE MEASURED FROM POINTS INDICATED TO THE CIRCUIT GROUND WITH A DIGITAL MULTIMETER TEST.

(6) WAVEFORMS ARE TAKEN WITH SETTING CONTROLS TO A NORMAL CONDITIONS (COLOR BAR PATTERN).

(7) THIS CIRCUIT DIAGRAM IS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

KONG WAH VIDEO ENGINEERING LTD.		
TITLE SCHEMATIC DIAGRM		
MODEL: K-3910	SYSTEM: FTZ	
DRAWING NO: 3910-02	COUNTRY	
DATE: 23-3-88	REV. D(7-9-88)	
DRAWN	CHECKED:	APPRD

TV1026 (Pal)

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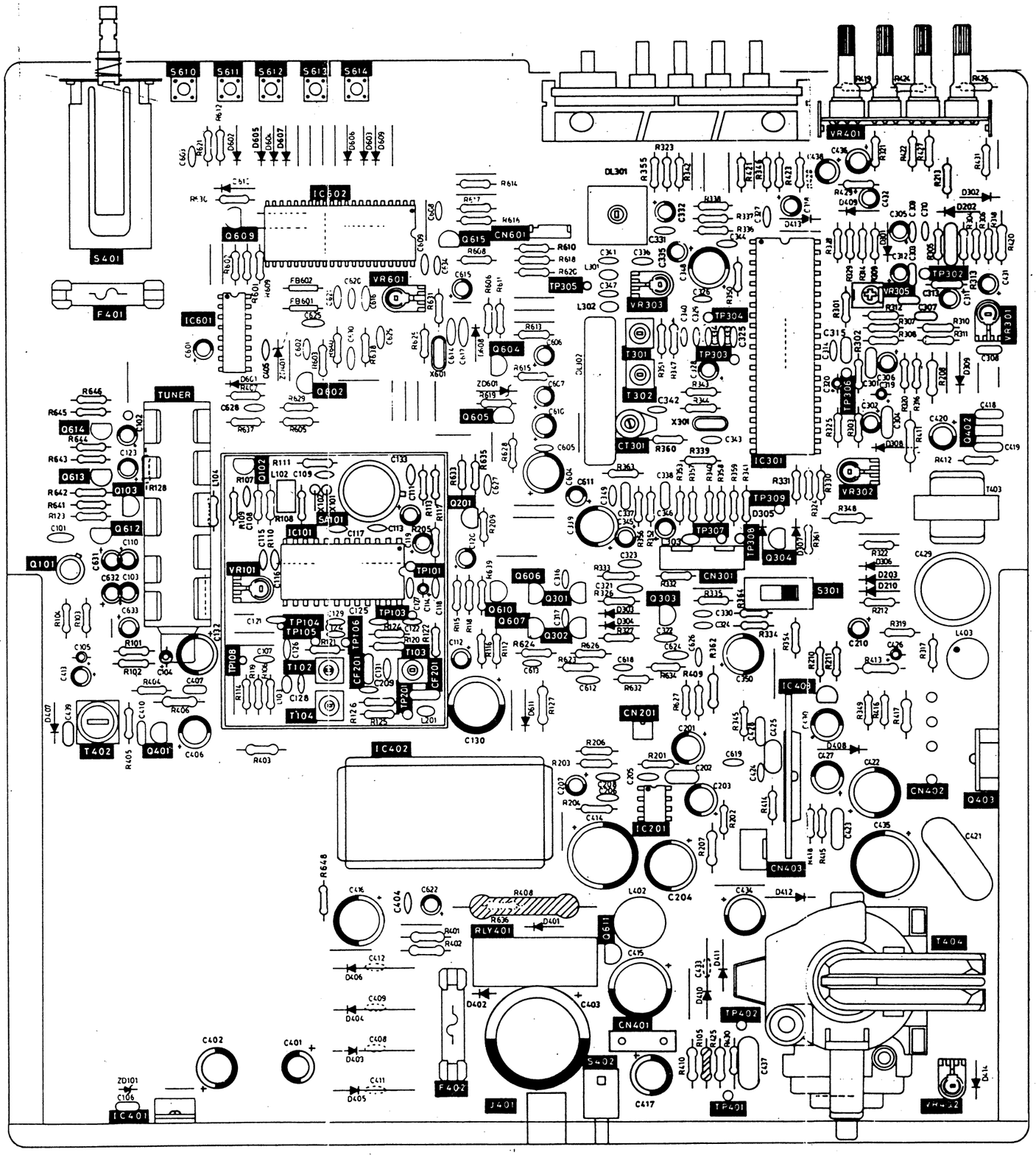
MC-Service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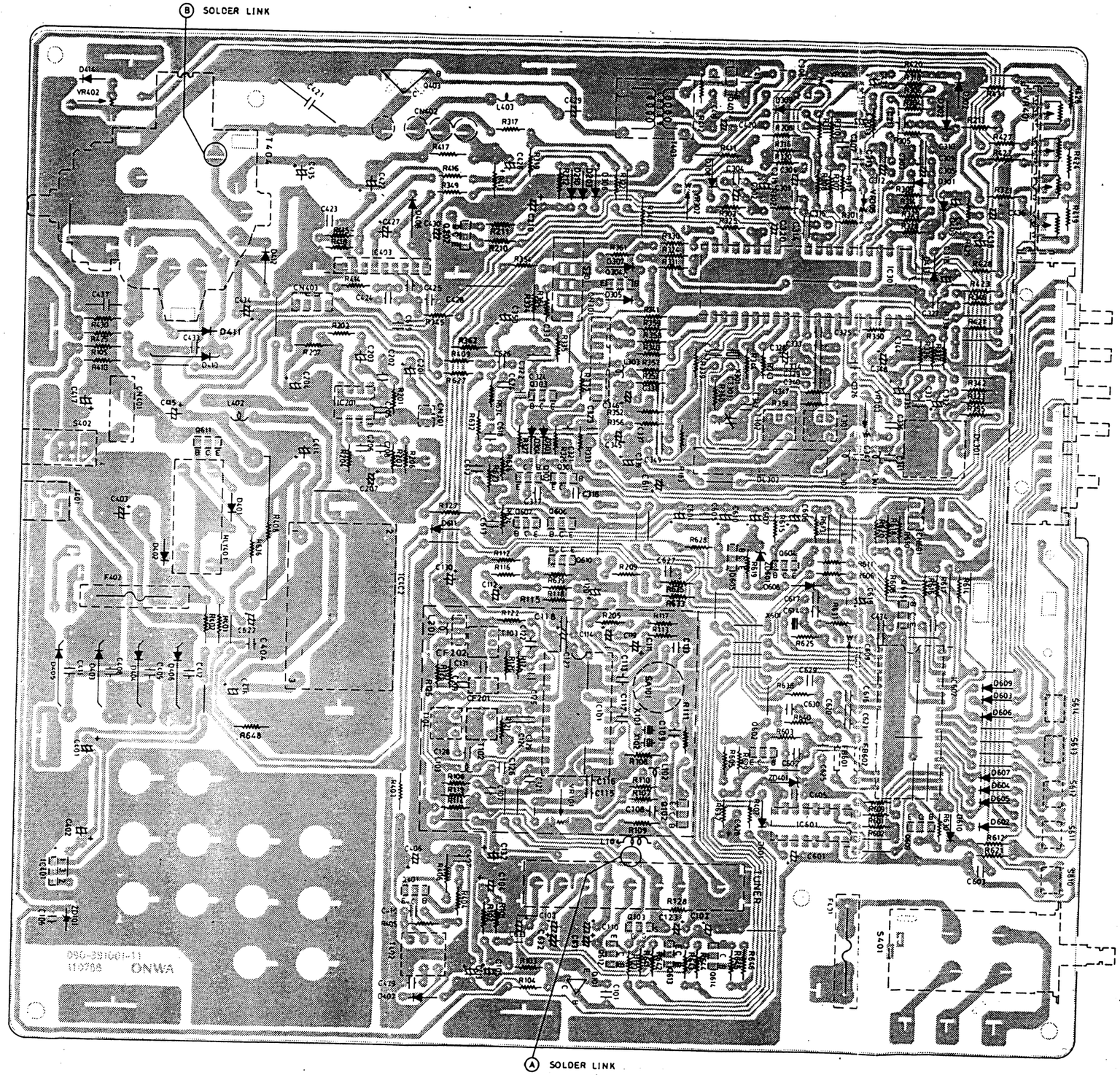
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A SOLDER LINK
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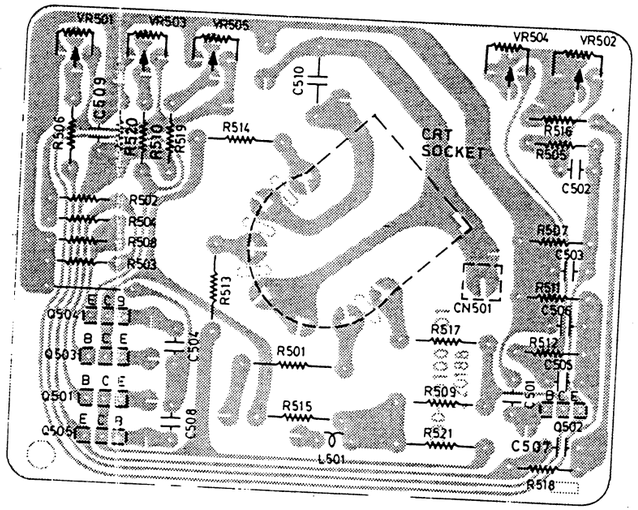
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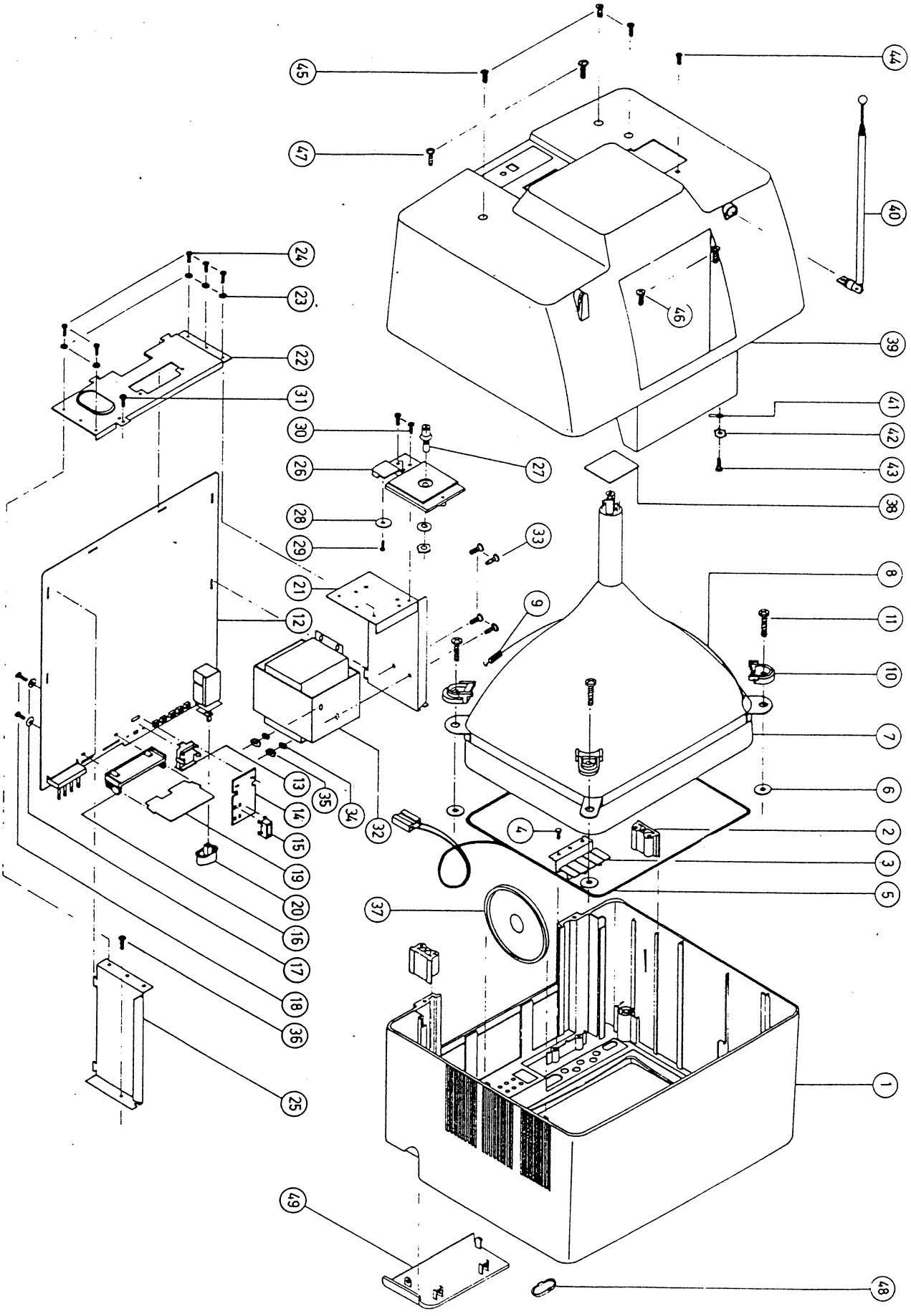
EXPLODED VIEW DIAGRAM



EXPLODED VIEW DIAGRAM FOR PARTS LIST :

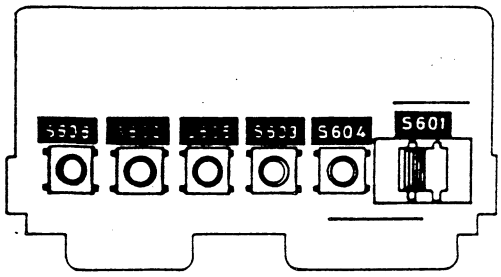
LOCATION	PARTS NO.	DESCRIPTION	QTY
1	200-391001-0X	CABINET FRONT	1
2	229-391004-01	MTG BRACKET	2
3	277-391001-0X	CHANNEL / VOLUME AND STAND BY KNOB	1
4	610-300110-10	SELF-TAPPING SCREW R/T 3 x 10 MM	2
5		DEGAUSSING COIL ASS'Y	1
6	334-371601-01	RUBBER RING (T=2.0 mm)	4
7		C.R.T.	1
8	072-830000-48	FLAT BRAIDED WIRE	1
9	477-371601-01	C.R.T. SPRING	1
10	229-371501-01	C.R.T. MTG CLIP	4
11	614-500425-10	SELF-TAPPING SCREW B/T 5 x 25 MM	4
12		MAIN P.C. BOARD ASS'Y	1
13	229-391001-01	REMOTE P.C. BOARD MTG BRACKET	1
14		PRE-AMP P.C. BOARD ASS'Y	1
15	229-391002-01	LED MTG BRACKET	1
16	229-391003-01	CHANNEL P.C. BOARD MTG BRACKET	1
17	530-080032-08	FIBER WASHER (1103)	2
18	610-300110-10	SELF-TAPPING SCREW R/T 3 x 10 MM	2
19		CONTROL P.C. BOARD ASS'Y	1
20	292-391001-01	POWER KNOB	1
21	428-391003-01	TRANSFORMER MTG BRACKET	1
22	428-391001-01	FLYBACK MTG BRACKET	1
23	633-055032-07	SPRING WASHER (503)	5
24	600-305008-10	MACHINE SCREW P/H 3 x 8 MM	5
25	428-391002-01	MTG BRACKET	1

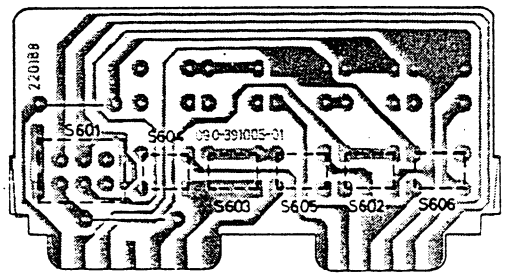
LOCATION	PARTS NO.	DESCRIPTION	QTY
26	280-391002-02	ANTENNA TERMINAL	1
27		ANTENNA SOCKET ASS'Y	1
28	530-140033-16	FIBER WASHER 14 x 3.3 x 1.6 MM	1
29	610-300108-10	SELF-TAPPING SCREW R/T 3 x 8 MM	1
30	600-305010-10	MACHINE SCREW P/H 3 x 10 MM	2
31	612-350212-10	SELF-TAPPING SCREW B/T 3.5 x 12 MM	1
32		POWER TRANSFORMER	1
33	603-407008-10	MACHINE SCREW T/H 4 x 8 MM	4
34	633-055042-07	SPRING WASHER M4 7.6 x 4.2 x 1 MM	2
35	620-407030-70	NUT M4	2
36	614-400412-10	SELF-TAPPING SCREW B/T 4 x 12 MM	2
37		SPEAKER	1
38		C.R.T. P.C. BOARD ASS'Y	1
39	202-391001-0X	CABINET BACK	1
40	482-607181-01	ROD ANTENNA	1
41	450-701201-01	SOLDERING LUG	1
42	630-060032-10	EXT. TOOTH WASHER	1
43	610-300110-10	SELF-TAPPING SCREW R/T 3 x 10 MM	1
44	610-300114-X0	SELF-TAPPING SCREW R/T 3 x 14 MM	1
45	600-407012-X0	MACHINE SCREW P/H 4 x 12 MM	3
46	614-500416-X0	SELF-TAPPING SCREW B/T 5.0 x 16 MM	2
47	614-400416-X0	SELF-TAPPING SCREW B/T 4.0 x 16 MM	2
48	263-391001-01	CABINET FRONT LENS	1
49	219-391001-0X	FRONT CONTROL PANEL DOOR	1

MC-Service

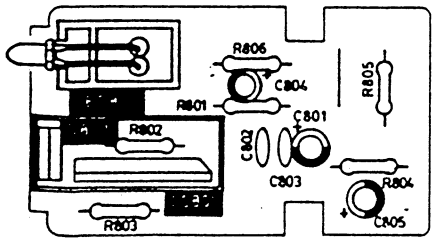
COMPONENT DIAGRAM

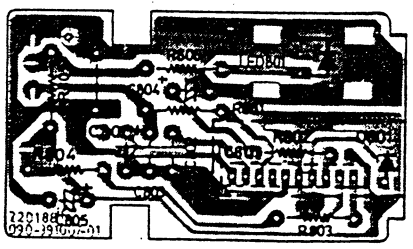
(TOP VIEW) CONTROL BOARD (BOTTOM VIEW)





(TOP VIEW) SENSOR BOARD (BOTTOM VIEW)





* REMARK : BLACK BACKGROUND WHITE LETTERING FOR ALIGNMENT POINT USE. *